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# Soil and Water Conservation News



United States Department of Agriculture
Soil Conservation Service



## Water Quality Is Everyone's Concern

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# Comments:
## *From the SCS Chief*

## Water Quality: A Critical Issue in Conservation Planning

All Americans share responsibility for the quality of our Nation's water resources.

Across the country, people are becoming more alert to the hazards of water pollution by atmospheric deposition and runoff or discharge from mining, construction, roads, urban areas, and industrial activities. But those are not the only sources of pollution. Unless good management is practiced, agriculture and forestry are potential nonpoint sources of sediment, animal waste, nutrients, pesticides, and salts.

The agricultural community is strongly committed to protecting the Nation's water resources. In cooperation with SCS and conservation districts, many farmers and ranchers have voluntarily installed resource management systems to reduce pollution, especially sedimentation of our surface waters. Activities under the conservation provisions of the 1985 Farm Bill will keep much agricultural soil and associated pollutants from washing into lakes, rivers, and streams.

SCS is helping other Federal and State agencies improve water quality. In the Great Lakes States, for example, we helped develop phosphorus-reduction plans for Lake Erie and Lake Ontario. SCS coordinates USDA efforts in the Colorado Salinity Control Program, and supports the Chesapeake Bay cleanup. We are assigning SCS specialists to the U.S. Environmental Protection Agency's (EPA) regional offices to help EPA and the States find ways of reducing nonpoint source pollution.

In SCS, we have a training program that helps agency field people and conservation district people integrate water quality considerations into their daily conservation activities. Conservationists from other Federal and State agencies—and from Canada and Mexico—use the program also. That training is aimed at improving surface water quality.

We have much to learn about the effects of agriculture on ground water quality. How agricultural chemicals and other substances move through soils and geologic strata is not well understood. More research will give us a better understanding of how conservation practices on different landscapes and under different climatic conditions affect ground water. Using the research available, SCS is developing a field-level training course on ground water protection strategies.

More and more, the Federal, State, and local agencies that carry out laws and programs affecting water quality will be seeking the advice and help of SCS and soil conservation districts. Our challenge is to help find practical and reasonable ways that America's farmers, ranchers, and other land users can address water quality issues. To that end, we must work with the best scientific knowledge available and ensure that we consider the potential effects of conservation measures on water quality.

**Cover:** Snowmelt from the Sierra Nevada Mountains in California. (Photo by Ron Nichols, photographer, SCS, Washington, D.C.)

Richard E. Lyng
Secretary of Agriculture

Wilson Scaling, Chief
Soil Conservation Service

All programs of the U.S. Department of Agriculture are available to everyone without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

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# Computer Model Guides Way to Cleaner Water

Water pollution from industries, or point source pollution, is relatively easy to identify. Nonpoint sources of pollution, however, are not easily identified. They include pollutants carried in runoff from broad areas that are urbanized, forested, and farmed. A computer model is helping conservationists develop ways to reduce the amount of these pollutants reaching waterways.

When Congress passed the Clean Water Act, Public Law 92–500, in 1972, it targeted all sources of water pollution for cleanup, including nonpoint. As a result, scientists from the U.S. Department of Agriculture's Soil Conservation Service and Agricultural Research Service went to work developing computer models for assessing the effectiveness of combinations of conservation practices for reducing nonpoint source pollution.

One of several computer models to come from this effort is CREAMS, an acronym for Chemicals, Runoff, and Erosion from Agricultural Management Systems. With CREAMS, scientists can look at more than just erosion and sedimentation. They can test farming activities such as the application of fertilizers, pesticides, manure, and irrigation water against a variety of conservation practices to evaluate the different effects on the quantity and quality of water leaving the field.

Water running off unprotected cropland carries sediment, nutrients, and pesticides to waterways.

In trials across the Nation, CREAMS is helping planners and farmers to choose the best management practices for protecting and improving water quality. For example, in the Midwest, CREAMS has been used to measure the effects of soil conservation practices on crop water use under irrigated and nonirrigated conditions. The following are other examples of ways States are using CREAMS.

### Louisiana

Toxaphene and other chlorinated hydrocarbon pesticides had impaired the sport fishery in Turkey Creek Lake near Winsboro. These chemicals were no longer being applied to crops, but were still in the soil. CREAMS was used to evaluate several land treatment alternatives for sufficiently reducing the amount of pesticides entering the lake and restoring fish production. Recommendations included use of terraces, grassed waterways, diversions, filter strips, and conservation tillage in the Turkey Creek drainage area.

### Arkansas

In Arkansas, CREAMS was used to evaluate fertilizer and animal waste usage in an effort to reduce the amount of nutrients from steep hay and pasture land entering Beaver Lake near Fayetteville. Methods were sought for reducing the pollutants entering the lake while maintaining the same level of agricultural production in the watershed. CREAMS indicated that more nutrients were washing off fields not treated with manure or other fertilizers than off treated fields. This was because the grass cover was so much better on treated fields and held the soil and associated nutrients in place. Recommendations for treatment included improved management of manure and other fertilizer applications to support good grass cover.

### California

CREAMS has been used in three parts of California to evaluate the effectiveness of conservation practices. In the Napa Valley, the heart of wine country, CREAMS helped

planners look at how well hillside benches and underground outlet systems reduce erosion. In a region of dryland grain near Pas Robles, CREAMS was used to study how conservation tillage reduces sheet and rill erosion. And in strawberry country not far from Salinas, CREAMS provided guidance on the use of a series of conservation practices in an effort to meet erosion control standards established by local ordinance.

**Wisconsin**

In Wisconsin, CREAMS is being used to identify the effects of variations in tillage practices; crop rotations; and pesticide, fertilizer, and manure management on five soils representative of the State's major agricultural areas. Results will be used to compare the effects of different resource management systems on runoff and the accompanying sediment, nutrients, and pesticides. CREAMS will also be used in selecting conservation practices for State-financed Wisconsin Fund Water Quality Projects and in studying the decrease in smallmouth bass populations in southwest Wisconsin with the Wisconsin Department of Natural Resources Fishery.

**Pennsylvania**

USDA's Economic Research Service (ERS) used CREAMS in Pennsylvania to evaluate the effectiveness of management practices in reducing soil and nutrient losses in the Conestoga Headwaters Rural Clean Water Program Project in Lancaster County. The ERS study showed that the best management practices for controlling erosion also generally reduce surface losses of nitrogen and phosphorus. The study showed that the movement of nitrogen through the soil can only be reduced by controlling the amount of nitrogen applied to the surface.

These and other field trials are proving CREAMS to be a powerful tool for helping farmers to better manage their resources and helping the Nation to obtain abundant waters suitable for all uses.

**James N. Krider,**
national environmental engineer,
SCS, Washington, D.C.

## Logging Success Against Erosion

Cleaning up the water in Vermont, which is 75 percent woodland, sooner or later involves the logging industry.

About 5 years ago, the Soil Conservation Service and the Orleans Natural Resources Conservation District began helping farmers apply conservation practices in the 85,000-acre Black River Watershed in northeastern Vermont. The goals were to reduce soil erosion and clean up the water entering scenic Lake Memphremagog.

Like it has done in many other watershed projects across the country, SCS went to work helping the farmers reduce the runoff of agricultural pollutants such as cow manure, milking center wastes, and sediment. About 10 percent of the sediment entering the lake, however, was not coming from farms. It was being washed from forests.

Although the overall soil erosion rate on the forest land was low compared to the rate on cropland, huge gullies had formed in some places where logging roads had been improperly installed and maintained, or simply neglected. In all, SCS identified 137 miles of logging roads in the watershed that needed conservation treatment.

"That's steep land up there in the forests," said Bruce Chapell, SCS district conservationist in Newport, Vt. "When you see something like that you get a feeling for how easy this land can be damaged."

With assistance from county foresters and private consulting foresters, the SCS staff compiled information on the critically eroding areas and the ongoing forest management practices. They then discussed the erosion problems with the loggers, telling them how they could reduce erosion, benefit the general population through improved water quality, and improve their operations.

After a thorough investigation, district officials placed priority on helping the loggers to correct two management problems that were producing most of the erosion on the forest land. The first was the practice of skidding, or dragging logs out of the forest during the wrong time of year, a problem that could be solved simply by eliminating skidding in spring. The other problem was a need for waterbars, or earthern ridges and depressions, to divert runoff to the side of logging roads.

According to Chapell, a little bit of preplanning can solve most of the erosion problems of the logging industry. "We don't have to have erosion in logging," he said. "It comes down to just taking that extra step. It's doing the right thing at the right time."

The cost of erosion control increases if gullies are allowed to form, requiring extensive backfilling and reseeding. It cost one logging firm operating in an unusually steep part of the watershed $6,000 to stabilize roads after the fact that, according to Chapell, could have been protected by preventive measures costing $500.

"I think this project has been a good learning experience for everyone involved," said Chapell. "It is a good example of what it costs to put in the practices at the start of a job versus trying to correct the problem afterwards. Preventive measures are the key to guarding against erosion at a fraction of the cost of remedial solutions. Educating landowners who aren't aware of potential problems would go a long way in halting erosion before it becomes a problem."

Overall, the cost of stabilizing the logging roads in the watershed will amount to about 2 percent of the estimated total project cost. "I think every one of our logging jobs has been very cost effective," said Chapell. "For very little money we have significantly reduced the amount of sediment entering Lake Memphremagog and are helping to protect it as a valuable asset for the entire region."

**Ann Dudas,**
public affairs specialist, SCS, Winooski, Vt.

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# Oklahoma Studies Water Quality

In Oklahoma, protecting and improving water quality has been part of natural resource conservation efforts since the 1930's. But, often, improved water quality has been more a bonus than a main objective of structural and vegetative measures designed to reduce soil erosion or control flooding.

In response to Section 208 of the Clean Water Act of 1972, Oklahoma and other States began developing better techniques for assessing nonpoint source water pollution and ways to reduce it. In 1980, the Oklahoma Conservation Commission, in cooperation with the State's 89 conservation districts, began a comprehensive monitoring program to gather data for documenting water quality conditions in watersheds across the State. Monitoring is done at 176 different sites during high runoff events.

So far, conservation district employees have collected thousands of samples at the monitoring sites and sent them to the Commission for analysis. Samples are checked for suspended solids, turbidity, total phosphorus, ammonia, nitrates, total Kjeldahl nitrogen, and chlorides.

Most samples have been collected with single stage collection devices on smaller streams, but sites on a few larger streams are also being monitored.

Soil Conservation Service field office staffs provided soil and other resource information which helped in selecting test sites. SCS also helped to train district employees in using water sampling equipment.

The water quality program in Oklahoma has two goals. The first is to document any inherent differences in suspended solids and turbidity that would be caused by the State's marked contrast in soils, climate, and vegetation. The monitoring done through 1986 has confirmed that differences do exist, with the lowest levels of suspended solids and turbidity occurring in eastern Oklahoma and steadily higher levels westward.

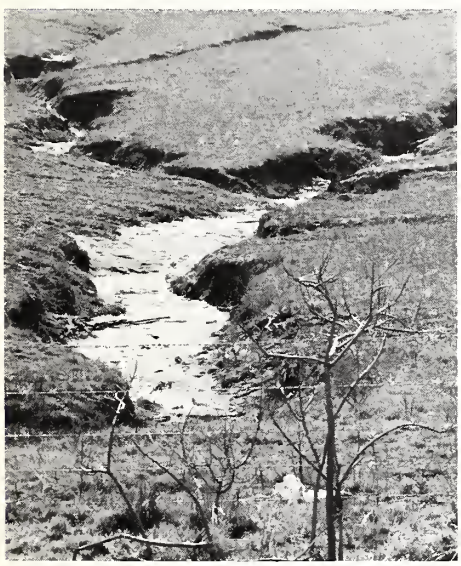
Work is underway to define water quality macro-regions showing generally consistent patterns of suspended solids and turbidity in streams. Once defined, information from individual watersheds within a given macro-region can be evaluated for levels of pollution above what can be expected because of inherent soil and other physical characteristics of the region.

The second goal of the program is to work with conservation districts to design management plans for reducing identified nonpoint source pollution problems, and once recommended practices are in place, assess how effective they are.

Sampling and analysis will continue, but the program will increasingly focus on more intensive survey techniques to show water quality conditions in specific watersheds before and after the application of management practices.

The Oklahoma Conservation Commission is working with several districts in northeastern Oklahoma on the first stages of these intensive watershed studies. The Commission is planning to make work in several of these watersheds into demonstration projects.

**F. Dwain Phillips,**
public affairs specialist, SCS, Stillwater, Okla.



Water erosion on this wheat field in Caddo County, Okla., carries sediment and other pollutants to waterways.

On this cropland field in Freedom, Okla., stubble mulch tillage that leaves over 3,000 pounds of crop residue per acre on the surface protects the soil from erosion.

# Good Land Management Cleans Up Lake

Tom Abend and his brother Art operate a 300-acre dairy farm overlooking Otisco Lake in central New York. The Abends, like most of the other farmers in Onondaga County, think of themselves as conservationists—not polluters.

About 5 years ago, however, local residents began complaining that the water from Otisco Lake, which supplies drinking water to more than 100,000 people and is an important recreation resource, was unfit to drink. To prove the point, one woman brought a jar filled with tap water to a town meeting. The water was cloudy and filled with particles. It smelled bad and tasted worse. Other residents complained that weeds and sediment were interfering with fishing, swimming, and boating in the lake.

The watershed of the lake covers 24,000 acres and is used intensively for agriculture. A study revealed that agricultural runoff in the watershed was a major source of the sediment and nutrients being deposited in the lake.

More than half the cropland in the watershed was eroding at three times the tolerable rate of soil loss. During spring storms and heavy rainfall, soil was eroded from crop fields and deposited in the lake. Since most of the farms are dairy operations, animal wastes were also carried into the lake. Nutrients from the crop fields and animal wastes—particularly phosphorus—were encouraging the growth of weeds and impairing the use of the lake for fish habitat, for recreation, and as a water supply.

To address these problems, Onondaga County requested help from the Soil Conservation Service. The result was the formation of the Otisco Lake Watershed Project, a cooperative effort by the land users; the water users; and the Federal, State, and local governments to reduce agricultural runoff and revitalize the lake while maintaining agricultural production in the watershed.

Before beginning the project, SCS estimated that at least 70 percent of the farmers in the watershed would have to participate in order for the project to be effective. When SCS surveyed the 68 farmers in the watershed, more than 83 percent said they were interested.

"One reason for this enthusiasm is that the farmers in the Otisco Valley like to think of themselves as conservationists—not polluters," said Al Sweetland, chairman of the Onondaga County Soil and Water Conservation District and the steering committee for the watershed project. "Based on their past use of voluntary conservation measures, I knew they would support this project."

By signing 3- to 10-year long-term contracts (LTC's) with the conservation district, the farmers can receive cost-sharing funds for installing practices to reduce soil erosion on their farms and improve water quality in the lake. SCS also provides technical assistance for planning and installing the practices. In 1986, SCS made $176,000 available to the first 11 farmers to sign LTC's.

Much of the Otisco Lake watershed in central New York is used for agriculture.

Excessive weed growth in Otisco Lake was caused by nutrients carried to the lake in runoff from farms.

From the beginning, there has been cooperation among the many entities concerned with the lake's water quality. In addition to SCS and the conservation district, other agencies and groups involved include the Lake Community Association, the county and State Health Departments, the Onondaga County Legislature, the Environmental Management Council, the Fresh Water Institute, the New York State Department of Environmental Conservation, the Onondaga County Water Authority, and several town governments.

State and local support was critical to the success of the project. Otherwise, even with Federal cost sharing, many farmers could not afford conservation measures such as animal waste storage facilities.

The New York Job Development Authority, a State agency, is providing farmers with low-interest loans to supplement the Federal cost sharing. The Authority will grant loans of up to 40 percent of the farmer's cost of installing conservation practices. At the same time, the Onondaga County Legislature is providing grant funds to help the farmers in the watershed purchase waste handling equipment such as spreaders, unloaders, and pumps. These funds can also be used to stabilize critically eroding streambanks that have been identified as sediment sources.

The Abends were among the first group of farmers to enter the program. They keep a herd of about 150 cows, and a small stream runs through their barnyard and down to the lake. Their land is so steep that only one 20-acre field is accessible during winter for spreading manure. The free stall barns are no more than 2,000 feet from the lake.

After entering into a 5-year LTC in 1986, the Abends switched to conservation tillage on some of their steeper cropland to reduce the high rates of erosion and installed a comprehensive waste management system to handle the manure and milkhouse waste. In the years to come, the brothers plan to install barnyard runoff control measures, terraces, and diversions and apply more conservation tillage.

Federal cost sharing covered about 65 percent of the cost of the tillage change and 50 percent of the new waste storage system. The low-interest loans from the Job Development Authority and the county grant monies were additional incentives. "Without the economic incentives offered by the various agencies," said Tom Abend, "there is no doubt in my mind that I would not be able to do everything I know is needed."

The new waste management system involves two storage areas for manure and will be very different from the daily spreading done in the past. Soil conditions are not suited to an underground system, so the Abends built a concrete structure above ground. Manure is moved from the barn down a ramp to a 12- by 24-foot circular, concrete retention pit. The retention pit holds approximately 2 to 3 weeks' accumulation of manure. Wastes from the milking parlor are piped underground to the pit. The manure is agitated, chopped with knives, and then pumped into a larger concrete storage pit. The main storage pit, which is 105 feet in diameter and 12 feet deep, can store up to 6 months of waste.

The Abends plan to have a tank truck equipped for injecting the manure into their soils this spring when the main storage tank is emptied for the first time. They estimate it will take about 2 to 3 weeks under good weather conditions to apply all of the manure.

The project at Otisco Lake is the first land treatment watershed project in New York and may prove to be a model for future projects. Through the cooperation of the many people concerned, Otisco Lake is on the mend and should be able to sustain fisheries and recreation and serve as a supply of good drinking water for many years to come.

**Howard Schuster,**
project coordinator, SCS, Seneca Trail Resource Conservation and Development Area, Franklinville, N.Y.

**Patricia Paul,**
public affairs specialist, SCS, Syracuse, N.Y.

Farmer Tom Abend and SCS Soil Conservationist Nancy Luna Hatcher discuss the conservation practices that Abend and his brother have installed to reduce the amount of sediment and nutrients leaving their farm in runoff and the practices that they plan to install in the future.

Photos by Karen Williamson, audiovisual production specialist, SCS, Albany, N.Y.

# Healing the Land

"Farmers broke out higher land because they had equipment that could do it. They never thought about soil erosion."

That's the way one farmer in Oneida County, Idaho, explained it. "Much of the land being farmed is marginal and should never have been broken out for farming to begin with," he continued. "It's just too steep."

Now, second and third generation farmers in the county must pay a high price if they want to continue farming that marginal land. The highly erodible soils, steep slopes, heavy spring snowmelt, and frequent intense summer thunderstorms plague the farmers with soil erosion and water quality problems.

According to Kevin Davidson, soil conservationist with the Soil Conservation Service at Malad, erosion has reduced dryland wheat yields by 14 to 18 bushels per acre in the county's Upper Little Malad watershed. Davidson said the steeper slopes lose an average of about 30 tons of soil per acre each year. "About 10 inches of topsoil have been lost from most of the cropland over the last 90 years," he said.

Another problem was uncovered 5 years ago by an SCS sedimentation study of Daniels Reservoir, located below the watershed. The reservoir was built for irrigation water storage in 1967 and had a projected lifespan of 100 years. But the study revealed that at the current rate of sedimentation the reservoir would be filled with sediment in only 52 years. Loss of the reservoir's water supply would have serious economic effects on the farmers who depend on it to irrigate their cropland. The sediment was also seriously affecting water quality in the Little Malad River. The sediment source: soil eroding from the farms in the watershed above.

In projects sponsored by the Oneida Soil Conservation District, farmers in two parts of the watershed—the Dairy Creek and Wide Hollow subwatersheds—are now applying conservation practices that will help solve these problems. The two projects cover 16,000 critical acres where erosion significantly affects water quality. Approval is pending for a third project covering the remaining 21,000 acres in the watershed.

Farmers in the subwatersheds who install and maintain conservation practices receive cost-sharing funds from the State Agricultural Water Quality Program administered by the Idaho Department of Health and Welfare's Division of Environment and the Idaho Soil Conservation Commission. SCS provides the farmers with technical assistance in planning and installing practices.

The most commonly applied practices are conservation tillage, terraces, permanent vegetation, stripcropping, farming on the contour, and keeping crop residue on the soil surface. Clean tillage, disking, and conventional plowing are being used less and less.

According to Davidson, 65 percent of the eligible farmers are now participating in the Wide Hollow project. He expects the participation rate to soon rise to 75 percent or more.

Darrel Swartz, a second generation farmer in the Wide Hollow area, grows wheat and barley on about 1,250 acres. After harvest last year, Swartz left 4,000 pounds of residue per acre on his fields, which provided an excellent protective cover against soil erosion. His farming techniques also include chiseling with sweeps. Behind that, he hangs a harrow and drill, so that he can weed and fertilize in one operation.

"It's just more economical to limit the number of trips across the fields," he said, "and it helps prevent soil compaction." He said his equipment gets plugged once in a while with the residue, but that this is a minor problem.

"The results are what counts," said Swartz. "We're just not getting floods and erosion or mud in the water like we used to. This project has been a real benefit."

Swartz also has terraces and participates in the new Conservation Reserve Program (CRP), a U.S. Department of Agriculture program to take highly erodible cropland out of production and keep it in permanent grasses, trees, or wildlife plantings.

Davidson said 21 other farmers in the two water quality projects have placed land in the CRP, which will help make the project activities even more effective. The participating farmers receive 50 percent cost sharing for establishing the cover and agree to maintain the cover for 10 years. In return, the government makes annual payments to the farmers to help offset the loss of income.

Together, Swartz and his son, Tyler, have 244 acres in the CRP. Tyler Swartz also has terraces and keeps a protective cover of residue on his land. "Taking out the steepest land will give me better averages on my good ground," he said. "I wasn't making that much on the steeper ground anyway, because I was always busting equipment on rocks. CRP, terraces, and crop residue will control the erosion."

Lavar Christoffersen, another farmer in the project area, said he has healed hundreds of washes on his ground since he started applying his conservation system. "I used to have to farm up and down because of washes every 40 to 50 feet," he said. "Now I can farm across the slope without stopping. It's just more efficient farming."

Christoffersen farms 2,200 acres and has installed some 300,000 feet of terraces. "Every bit of water I can keep on my land helps," he said. He is installing grassed waterways to properly manage the water that does run off.

Because of the action taken by the farmers in the Upper Little Malad watershed, future generations will be able to make their living off the land just as they are today. "I think we've done a great job," said Christoffersen, "of healing the land."

**Sharon Norris,**
public affairs specialist, SCS, Boise, Idaho

## Controlling Erosion Protects Water Supply

It took 5 years and the combined efforts of more than a dozen government agencies, but Lumberport, W. Va., has good drinking water again.

The 1,000 residents of Lumberport, as well as many residents in surrounding Harrison County, obtain their water from a 4-acre reservoir in the Jones Run Watershed. Five years ago, the reservoir, which was built in 1929, had become nearly filled with 10,000 cubic yards of sediment, enough to cover a football field to a depth of more than 7 feet. The sediment was traced to erosion in the watershed, where fragile, sloping soils had been left bare and unprotected by the activities associated with mining, farming, logging, roadbuilding, constructing a pipeline, and drilling gas wells.

Working through one of the State's regional Planning and Development Councils, the Town Council and former Mayor Ron Wright obtained a grant of $176,000 from the U.S. Department of Housing and Urban Development (HUD) to dredge the reservoir and build a cofferdam upstream to form a sediment collection pond. One of the conditions of the HUD grant was that the town had to develop and help carry out a plan for reducing erosion in the watershed. Otherwise sediment would soon fill the reservoir again.

The Planning and Development Council and Lumberport officials requested assistance from the Wes-Mon-Ty Resource Conservation and Development (RC&D) Area. Although the RC&D area had no funds for installing conservation practices, it suggested that the town take advantage of various ongoing programs. The RC&D staff worked with Federal and State agencies to develop a 5-year plan for controlling erosion in the watershed at no cost to the landowners. The work plan detailed the area of responsibility for each participating group.

In addition to the HUD grant, Federal support included technical assistance from the Soil Conservation Service and cost sharing from USDA's Agricultural Stabilization and Conservation Service. USDA's Cooperative Extension Service from West Virginia University took the leadership in semiannual landowner meetings. USDA's Farmers Home Administration made loans available for land improvement.

West Virginia's Department of Natural Resources handled requests for woodland service and monitored water quality. The Reclamation Division of that department, which is now in the State Department of Energy, enforced reclamation of surface and deep mines. The State Department of Mines enforced reclamation of gas well sites and access roads, and the State Department of Highways treated bare roadbanks.

At the local level, two soil conservation districts, the West Fork and Tygarts Valley, made their work crews and equipment available for the revegetation work. The Jones Run Farmers club promoted the project and helped keep landowners informed, and Mayor Wright served as liaison with the gas, oil, and coal industries. And, in what may be the first effort in West Virginia of a town to share reclamation costs with the landowners upstream, the Town Council appropriated $1,000 per year to help pay for erosion control work.

The agencies went to work helping the landowners to stabilize the most critically eroding areas first. Mostly this involved grading, leveling, smoothing, and seeding the land to grasses and other conservation plants and keeping cattle out until the stands were established.

Today, with the work finished, the town once again has an ample supply of good water. "Last summer, Lumberport was one of the few towns in the area not experiencing a water shortage," said Madge Kellison, the new mayor. "This volume of water resulted in a reduction of fire insurance rates for Lumberport."

How good is the water? "I have lived in Lumberport since 1948," said Fred Early, town councilman. "The town now has the best water in all those years."

**Maurice Allman,**
coordinator (retired), Wes-Mon-Ty RC&D Area, SCS, Philippi, W. Va.

## 1985 Farm Bill Conference to be Held

A national conference to assess implementation of conservation provisions in the 1985 Farm Bill will be held November 1–4, 1987, at the Hyatt Regency Hotel in Kansas City, Mo.

The conference is being sponsored by the Soil Conservation Society of America (SCSA) in cooperation with a number of other conservation organizations, farm groups, and government agencies.

Conference speakers will look at how the Conservation Reserve Program, conservation compliance, sodbuster, swampbuster, and conservation easement provisions of the Food Security Act of 1985 are being accepted by farmers and ranchers; how effective the programs might be in reducing soil erosion and other forms of environmental degradation; what problems confront agencies in implementing the provisions; and what the future of the provisions might be.

Heading the program committee for the conference are George Dunlop, assistant secretary for natural resources and environment, U.S. Department of Agriculture, and Marlin Edwards, agricultural resource specialist for Pioneer Hi-Bred International, Inc.

A preliminary program and other information about the conference will be available this summer from SCSA, 7515 N.E. Ankeny Road, Ankeny, Iowa 50021-9764.

SCSA is a private, nonprofit organization dedicated to advancing the science and art of good land and water use. It has 13,000 members in the United States, Canada, and 80 other countries.

# Farmers in Compliance With Their Love of the Land

Samuel Victor says: "Recognition of land as our greatest natural resource demands that we use it in such a way that future generations can produce the necessary food for a growing population."

Harry Perkins says: "Conservation farming is important from an economic standpoint and in considering the long-term benefits to the land."

Larry Johnson says: "Since I began farming, I have felt a need to conserve our resources for my children and future generations. I hope my children will be able to carry on the tradition of farming. I want to preserve the farm for them."

To these three farmers, conservation is a way of life. They and their families are the 1986 winners of the annual conservation awards sponsored by the National Endowment for Soil and Water Conservation and the Du Pont Co.

For their achievements in conservation, the families were recently presented with $1,000 cash awards in Washington, D.C. They also visited President Reagan at the White House, met with members of Congress from their home districts, and had breakfast with Secretary of Agriculture Richard E. Lyng.

Secretary Lyng commended the winners for their outstanding efforts. "I take great pride in honoring these outstanding conservation farm families," he said. "Their conservation achievements show that good conservation is good economics. A conservation ethic goes beyond the management of soil and water—wise conservation translates into sound overall management of all farm and ranch resources. To conserve our natural resources and maintain a viable agricultural economy, we must all continue to work together."

Sam Victor's 3,659-acre farm and ranch near Afton, Okla., has been in his family since 1891 and has been used as a conservation demonstration farm for two decades. He now operates it in partnership with his son, Grant.

Although they have already worked to get erosion under control on most of their farm, the Victors welcome the conservation provisions of the Food Security Act of 1985. "I'm all in favor of the new conservation laws, but I'm ahead of the program," Sam Victor said. "We have only 38 acres eligible for the Conservation Reserve Program."

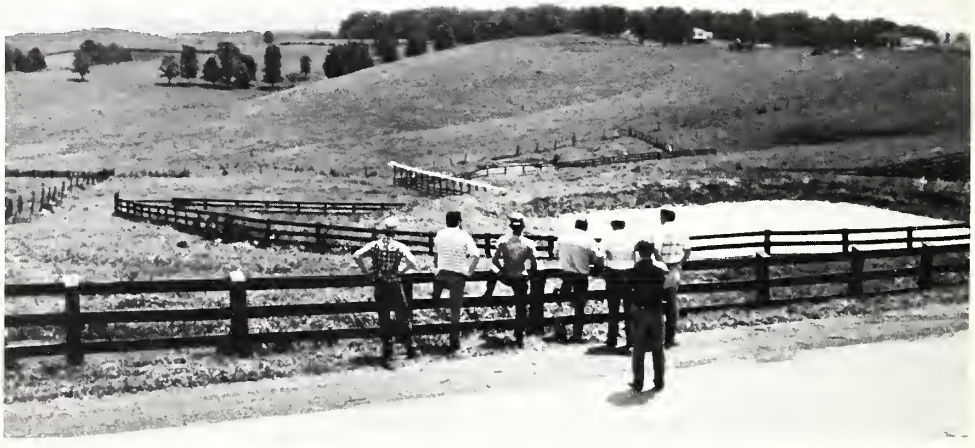
The Conservation Reserve Program (CRP) is one of several conservation provisions in the new farm law. The CRP helps farmers retire highly erodible cropland by paying up to half the cost of establishing permanent cover. Under 10-year contracts, farmers receive annual rental payments on the retired land.

Grant Victor spoke strongly in support of another provision, conservation compliance. "Why should a guy farm highly erodible land and then ask for crop payments? Farmers should not get payments if they don't conserve their land," he said.

Conservation compliance requires farmers to develop conservation plans by 1990 and install conservation systems by 1995 on their highly erodible land if they are to remain eligible for certain U.S. Department of Agriculture (USDA) program benefits. Only by practicing sound conservation practices will farmers qualify for such USDA benefits as price and income supports, crop insurance, commodity credit storage payments, and Farmers Home Administration loans.

The Victors have retired about 52 percent of their cropland over the past 40 years and planted it to permanent grasses. To prevent overgrazing, which can damage the protective plant cover, they closely monitor grazing in areas that were once highly unstable and erodible. On fields that are still cropped, they have installed a combination of terraces, overhead water diversions, and waterways. No-till and minimum

Two conservation farmers, Grant Victor, at left, and his father, Samuel Victor, in a field that they converted from cropland to Bermudagrass pasture to control soil erosion.



Participants of a farm tour look over improved pastures on Harry Perkins' dairy farm in Greenbrier County, W. Va.

tillage planting methods complement these structural changes.

The Victors have built 24 ponds to better distribute the grazing of their 1,150 head of cattle. They control erosion of pond dams by using overflow pipes to divert excess water through the dams rather than allowing it to spill over or around them.

"We're putting fences around our ponds to keep the cattle out of them too," Grant said. "That makes for much better quality of water." They installed all-weather stock tanks adjacent to the ponds and planted all pond banks to reed canarygrass.

"Land is our greatest natural resource, and we're just caretakers," Sam Victor said. "We've had our farm nearly a hundred years, which is a long time for us, but that's nothing to the land. It's been here forever."

Harry Perkins' dairy farm in Greenbrier County, W. Va., was known as a poor farm when he bought it 25 years ago. Production was low, but that was before Perkins began applying conservation practices to improve the land and its production.

His first task was to control erosion and increase forage capacity. He cut brush from fields and planted alfalfa, orchardgrass, and bluegrass. Every 4 years, he spread lime and fertilizer on hay and pasture fields. He also installed more than 4,000 feet of drainage tile on wet, low-lying fields.

A complete conservation system makes Larry Johnson's farm in Woodbury County, Iowa, a model of good soil and water conservation.

When Perkins started, the farm would barely support 50 cows. Now, he produces enough pasture and hay for 100.

In the parts of the farm that suffered from lack of water, Perkins put in at least two watering facilities for each pasture. This shortened the distance the cows had to walk for water and cut down on the number of cattle trails. In 1983, he installed a complete water management facility, including a holding pond for wastewater below the milking parlor.

Perkins first tried no-till corn farming in 1969, long before it was widely used. His success convinced him—and many other area farmers—to accept no-till as a reliable farming method. By combining no-till planting with crop rotations and contour strips, he has reduced soil erosion from 17 tons per acre per year to 1 ton.

Under Harry Perkins' stewardship, a farm that wasn't expected to produce much is now regarded as one of the best farms in the area. It is now used for conservation tours and demonstrations.

Larry Johnson's farm in Woodbury County, Iowa, shows the lessons of conservation. "I used to be a terrible farmer," Johnson said. "I'd plow up and down hills. Naturally, when it rained it would wash out big gullies."

Over nearly 30 years of farming, however, Johnson has changed. Now, his farm is a model of conservation practices. "You just have to be committed to doing the little things like contouring, rotating crops, maintaining waterways, and seeding headlands," he said.

Johnson uses conservation tillage on 413 acres and no-till on 40 acres. He plants rye as a fall cover crop. He has installed 13 water and sediment control basins, 3,000 feet of waterways to reduce runoff and filter the water that does flow from his farm, and more than 8 miles of terraces.

Most of the farm's 169 acres of pasture is planted to smooth bromegrass, although 29 acres have been converted to switchgrass. Planting switchgrass for pasture is a relatively new practice in the county, and Johnson was among the first to adopt this conservation technique.

"One step leads to another," Johnson said. "You start simple, with something you know you have to do, like contour plowing. When you see the results of that, you go on to something else."

Even though all of his 680-acre farm now meets the acceptable level of erosion, Johnson is all for the new conservation programs, including conservation compliance. "Unfortunately," he said, "it's the only way to get some people to conserve their land."

Johnson's farm has been used several times by the Soil Conservation Service to demonstrate conservation practices and is often included on conservation tours. One tour consisted of a delegation of Chinese officials. SCS personnel have also used the farm for training sessions on pasture management and planning.

The National Endowment for Soil Conservation is a not-for-profit, privately funded organization founded in 1982. It sponsors the annual awards program to help make farmers, ranchers, and the general public more aware of the importance of conserving natural resources.

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